

## ABSTRACT

A holographic recording and reproduction apparatus 10 has a spatial light modulator 18C for converting digital information to a two-dimensional image and for intensity  
5 modulating an object beam based on the two-dimensional image. The spatial light modulator 18C is configured to employ four or more pixels on the two-dimensional image as a unit pixel block, and allow at least two types of encoded patterns having a different number of ON pixels in the unit pixel block to be  
10 present at the same time for display of the two-dimensional image. During a reproduction operation, a two-dimensional photodetector 24 detects the amount of light on per unit pixel block basis to determine the number of its ON pixels and then set a threshold, and thereafter an image pickup device 22B  
15 detects the image.